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| 10/789,097 | 02/27/2004 | Kenichi Takano | HT03-030 | 7683 |

7590 10/11/2006
STEPHEN B. ACKERMAN
28 DAVIS AVENUE
POUGHKEEPSIE, NY 12603

EXAMINER

WATKO, JULIE ANNE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2627

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,097

Applicant(s)

TAKANO ET AL.

Examiner

Julie Anne Watko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 36 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/06/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I, claims 1-35 in the reply filed on August 24, 2006, is acknowledged. The traversal is on the ground(s) that "The process claims necessarily use the product and vice versa." This is not found persuasive because the process as claimed can be used to make another and materially different product, as stated in the restriction requirement. Applicant has failed to show evidence that such other and materially different product would have been unworkable. Furthermore, Applicant has argued that "these reasons are insufficient to place the additional cost of second and third patent applications upon the applicants." This argument is moot insofar as claims 36-37, if pursued in a divisional application, would not necessitate a "third" application.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The disclosure is objected to because of the following informalities: On page 9, lines 10-11, the specification recites "FIG. 9 ... is similar to the first embodiment except that there is no end piece (element 52 in FIG. 5)." This is inconsistent with the appearance of Fig. 9, which includes element 52.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 8-14 and 22-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "said end piece" in the 2nd to last line. There is insufficient antecedent basis for this limitation in the claims.

Claim 22 recites the limitation "said first distance" in line 19. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtomo et al (US PAP No. 20040105189 A1).

As recited in claims 1, 8, 15 and 22, Ohtomo et al show a magnetic write head comprising and ABS 15, a top pole (including 13 and 8) having a first top surface and a first thickness, and a bottom pole (5, for example), said poles being separated by a write gap 6, the bottom pole further comprising front 24 and rear sections resting on a flat layer (18 or 27, for example) having an outer edge, said front section 24 further comprising trapezoidal (see shape of protrusion 24 in Fig. 8; see also ¶ 0056) front and rear vertical walls, separated by a second thickness, and an upper flat area; centrally located on said upper flat area, a flux concentrator (front part of 22) that extends toward said top pole, thereby defining a lower bound for said write gap 6, and having an upper surface; a flux extender (rear part of 22) connected to said flux concentrator (front part of 22) on said rectangular prism upper surface, whose upper surface is coplanar with said flux concentrator upper surface, and that extends therefrom and is connected thereto, said flux concentrator (front part of 22) and said trapezoidal front wall (front part of 24) each having a surface that forms part of said ABS 15.

As recited in claims 1 and 22, Ohtomo et al show said top pole including an end piece (including 8 together with part of 13) having a top surface that is coplanar with said first top surface and a thickness that exceeds said first thickness, said end piece being disposed to lie directly above said bottom pole and extending horizontally from the ABS.

As recited in claims 1 and 8, Ohtomo et al show a rectangular prism 5 (see Fig. 13) having vertical inner and outer walls with said inner wall symmetrically contacting said trapezoidal rear wall, said outer wall extending to said flat layer 17 outer edge.

As recited in claims 15 and 22, Ohtomo et al show a rectangular prism 19 having vertical inner and outer walls with said inner wall symmetrically contacting said trapezoidal rear wall,

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that a portion of said flat layer 18 is not covered (see Fig. 2, for example) by said rectangular prism 19.

As recited in claims 1, 8 and 22, Ohtomo et al show said end piece (including 8 and part of 13) having a surface that forms part of said ABS 15.

As recited in claim 15, Ohtomo et al show a top pole piece 13 having a surface that forms part of said ABS 15 (see Fig. 22).

Ohtomo et al, however, remain silent as to the specific dimensional relationships set forth in claims 1-28.

Official notice is taken of the fact that it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization/ experimentation and thereby obtain various optimized relationships including those set forth in claims 1-28.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the magnetic head of Ohtomo et al satisfy the relationships set forth in claims 1-28. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the magnetic head of Ohtomo et al satisfy the relationships set forth in claims 1-28 since it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization /experimentation and thereby obtain various optimized relationships including those set forth in claims 1-28.

Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the relationships set forth in claims 1-28 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

8. Claims 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (US PAP No. 20030053251 A1) in view of Ohtomo et al (US PAP No. 20040105189 A1).

As recited in claim 29, Yoshida et al show a magnetic write head comprising: an ABS 30, a top pole 11 having a first top surface and a first thickness, and a bottom pole (including 1 and 2), said poles being separated by a write gap 4; said bottom pole further comprising front (in front of 60) and rear (behind 60) sections resting on a flat layer 1 that extends a first distance from said ABS 30; said front section further comprising: trapezoidal front and rear vertical walls (below trims 50), separated by a second thickness, and an upper flat area; centrally located on said upper flat area, a flux concentrator (see part between trims 50 in Fig. 1) that extends upwards towards said end piece, thereby defining a lower bound for said write gap, and having an upper surface; said rear section further comprising: a rectangular prism (behind trim 50)

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having vertical inner and outer walls with said inner wall symmetrically contacting said trapezoidal rear wall; said inner and outer walls being separated by a second distance, whereby a portion of said flat layer 1 is not covered by said rectangular prism (see Fig. 1); said rectangular prism having an upper surface that is coplanar (see coplanarity of surface between trims 50 with surface behind trims 50 in Fig. 1) with said flux concentrator upper surface; and said lower pole (including 1 and 2), said flux concentrator (between trims 50), and said trapezoidal front wall all having surfaces that form part of said ABS 30.

Yoshida et al are silent regarding said top pole having a planar lower surface that defines an upper bound for said write gap.

Ohtomo et al show a top pole 13 having a planar lower surface (see Fig. 22) that defines an upper bound for a write gap 6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the planar lower surface defining an upper bound for the write gap of Yoshida et al as taught by Ohtomo et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to improve frequency characteristics of Yoshida et al by shortening a circumferential length of the magnetic circuit of Yoshida et al as taught by Ohtomo et al (see ¶ 0079, “upper magnetic pole has no front end layer but includes only the planer upper magnetic pole upper layer 13 ... since the circumferential length of the magnetic circuit can be shortened, this is advantageous for the improvement in frequency characteristics”).

Yoshida et al, however, remain silent as to the specific dimensional relationships set forth in claims 29-35.

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Official notice is taken of the fact that it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization/ experimentation and thereby obtain various optimized relationships including those set forth in claims 29-35.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the magnetic head of Yoshida et al satisfy the relationships set forth in claims 29-35. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the magnetic head of Yoshida et al satisfy the relationships set forth in claims 29-35 since it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization /experimentation and thereby obtain various optimized relationships including those set forth in claims 29-35.

Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the relationships set forth in claims 29-35 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Conclusion

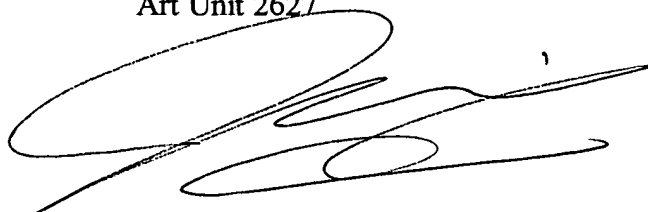
9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday through Friday, 1PM to 10PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko, J.D.
Primary Examiner
Art Unit 2627

October 6, 2006
JAW

A handwritten signature in black ink, appearing to be 'Julie Anne Watko', written over the printed name and title.